ASSESSMENT OF THE EFFECT OF INSTRUCTIONAL METHODS ON THE ACHIEVEMENT SCORES OF MALE AND FEMALE SECONDARY SCHOOL STUDENTS IN READING COMPREHENSION IN CROSS RIVER STATE

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ABSTRACT

This study investigated the effect of instructional methods on the achievement scores of male and female secondary school students in reading comprehension in Cross River State. This study adopted quasi-experimental design. The research area of this study is Cross River State of Nigeria. The population of this study comprised all 24,573 Senior Secondary II students enrolled in the 300 public secondary schools across River State during the 2024/2025 academic session. The study used a sample size of 723 senior secondary two (SSII) students. The sample was drawn from the area of study using multi-stage sampling techniques. The instrument used for the data collection is the Reading Comprehension Achievement Test (RCAT) adapted by the researcher from the West African Senior School Certificate Examination English Language Question paper. Face and content validation was used. The data collected were used to determine the reliability coefficient using Kuder Richardson 20 (K-R 20) which yielded an index of 0.91, considered reliable. Data collected from the pretest and post-test were analyzed with mean, standard deviation and Analysis of Covariance (ANCOVA). Mean was used to answer the research questions. The standard deviation was used to determine the proximity of scores while the hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance. This study concluded that the self-directed instructional strategy significantly enhances students' achievement in comprehension compared to the conventional teaching method. Evidence from the analysis shows that there is significant difference in the mean achievement scores of students taught comprehension using self-directed instructions strategy and those taught with conventional method. And also that there is no significant difference in the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy.

KEYWORDS: Achievement Scores, Students, Comprehension, Self-Directed Instructional Strategy, Secondary Schools.

INTRODUCTION

Within English language education, reading comprehension stands as a cornerstone of academic success and lifelong learning. Reading comprehension transcends the mere

ability to decode written symbols to encompass the construction of meaning from text. It requires readers to interpret, analyze, synthesize, and evaluate information, integrating new knowledge with prior experiences (Snow, 2018; Readability Tutor, 2025). Effective comprehension draws upon multiple interrelated cognitive processes, including literal understanding, inferential reasoning, vocabulary mastery, syntactic awareness, and metacognitive monitoring. Literal comprehension enables readers to recall explicitly stated ideas, whereas inferential comprehension demands logical reasoning and the ability to discern implied meanings. Vocabulary knowledge and familiarity with text structures facilitate understanding and retention of complex materials, while metacognitive skills such as predicting, questioning, summarizing, and clarifying enable readers to regulate their own understanding (Lumen Learning, 2014). Retention is the ability to hold, keep or recall past experiences and reproduce learned concepts when the need arises (Bukunola & Idowu, 2012). According to Filgona and Sababa (2017), retention of learned material is the ability of the students to comprehend the acquired knowledge of a particular subject. It is exhibited by the learners through successful performance in the tests organized to measure their achievement. The ability of students to recall past learned science concepts is one of the objectives of science teaching and learning. Retention plays a major role in understanding, comprehension, and students' achievement in reading.

Instructional strategies play a central role in shaping students' achievement in reading comprehension as well as retention. The conventional method of English language instruction in Nigeria is often characterized by the "talk and chalk" or conversational approach, in which information flows predominantly from teacher to students (Igwe, 2020). This teacher-centred method provides limited opportunities for active engagement, critical thinking, or independent learning. Lessons are frequently dominated by rote memorization and literal recall, which may enable students to pass examinations in the short term but often fail to promote deep comprehension. Given that reading comprehension requires active processing, inference, and strategic engagement with text, reliance on such conventional practices constrains learners' ability to construct meaning and apply comprehension strategies.

Despite its promise, the application of self-directed instruction to Nigerian senior secondary school English reading comprehension remains under-researched (Ibrahim & Bello, 2020). Contextual constraints—such as large class sizes, limited teacher training, and inadequate learning resources—pose challenges to its implementation. Nevertheless, SDIS holds potential as a context-sensitive model for promoting independent learning in resource-constrained environments like Cross River State, where traditional methods have failed to produce satisfactory reading comprehension outcomes.

Gender and school location are critical variables in understanding students' achievement in reading comprehension. Gender reflects socially constructed roles and expectations that shape educational experiences (WHO, 2019). A growing body of evidence indicates that female students generally outperform males in reading comprehension tasks (James, 2025; Ngwoke, 2022). Girls often exhibit stronger reading habits, higher intrinsic motivation, and greater perseverance, which enhance their engagement with texts (Okunnuwa, 2024). Cognitive studies further suggest that females may demonstrate greater

proficiency in higher-order comprehension processes requiring critical thinking and analysis (Oda & Kadhim, 2017).

STATEMENT OF PROBLEM

The persistent low achievement of senior secondary school students in reading comprehension remains a pressing concern in Cross River State. Although English is both the medium of instruction and a compulsory subject in Nigerian schools, many students still experience difficulty in comprehending, interpreting, and analyzing written texts. This deficiency undermines performance not only in English but also across other academic subjects, as reading comprehension is central to learning and intellectual development. The recurring poor outcomes in external examinations such as the West African Senior School Certificate Examination (WASSCE) highlight the gravity of this problem. This situation calls for urgent investigation into how instructional strategies can be tailored to meet the diverse learning needs of students. It is also necessary to examine the influence of gender and school location on students' comprehension achievement, as well as how learners can be empowered to take more active roles in developing their literacy skills. Therefore, this study seeks to address the persistent challenges in reading comprehension achievement among senior secondary school students in Cross River State with a view to improving their academic performance and fostering lifelong learning.

RESEARCH OBJECTIVE

1. Examine the mean achievement scores of students taught comprehension using self-directed instructions strategy and those taught with conventional method
2. Determine the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy.

RESEARCH QUESTION

1. What are the mean achievement scores of students taught comprehension using self-directed instructional strategy and those taught with conventional method?
2. What are the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy?

RESEARCH HYPOTHESIS

H01: There is no significant difference in the mean achievement scores of students taught comprehension using self-directed instructions strategy and those taught with conventional method

H02: There is no significant difference in the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy.

CONCEPTUAL REVIEW

Self-Directed Instructional Strategy

Students take ownership and responsibility for their own studies by choosing specific experiences that interest them the most, such as through either a hands-on or lecture-based

delivery method which results in a more natural and desirable comprehension of a subject. By choosing what, how and when to learn, students who use the Self-Directed Instructional Method (SDIS) take control of their education. Its foundation is the belief that students are competent of freely determining their learning requirements, establishing objectives, choosing approaches and assessing their own progress. This approach is strongly related to constructivism, which emphasizes that learning is a process that is active and self-constructed (Rindal, 2014).

Self-Directed Learning (SDL) is an instructional strategy where the students, with guidance from the teacher, decide what and how they will learn. It can be done individually or with group learning, but the overall concept is that students take ownership of their learning (Abeni, 2018). Additionally, self-directed learning is an approach to education that empowers learners to lead their own learning journey. A learner identifies their own learning goals, the resources they need and the strategies they want to adopt and set about gaining new knowledge or skills and later, evaluate the outcome. SDL means self-learning under the directions of teachers in essence, all learning is self-learning. Even when a teacher gives a lecture, it is the student who is learning, however, SDL is not synonymous with self-learning. Telling students to sit in the classroom or library and read a chapter is not SDL but what makes self-directed learning different is the 'locus of control.' In SDL, it is the learner who takes the initiative and controls the direction of learning, hence locus of control' refers to learners' belief in their abilities to control life events. Individuals who have a predominantly internal locus of control believe they have the power to direct and control the events which affect their lives (Achi, 2017). On the other hand, individuals who have an external locus of control believe that events in their life are controlled by factors such as fate, chance or fortune, which are beyond their control.

Students assume main responsibility for their own learning through a learner-cantered approach that is emphasized by the Self-Directed Instructional Strategy (SDIS). This strategy encourages students to actively engage in the learning process, make choices about their study goals and develop skills in self-regulation, such as time management, goal-setting and self-assessment (Shea &Bidjerano, 2019). In contrast to traditional teacher-centered models, SDIS allows learners to explore and construct knowledge at their own pace and according to their individual needs, often leading to a deeper understanding and retention of content (Santos, 2021).

Garrison (2018) defines SDIS as an approach where learners are actively involved in their learning processes, taking responsibility for their educational journey through self-management and self-regulation strategies. He further added that SDIS encompasses a range of instructional methods that allows learners to set their own learning objectives, choose appropriate resources, and evaluate their progress, thus fostering greater engagement and ownership of learning experience. Anshu, Gupta & Singh (2022) explained that self-directed learning is a process in which individuals take initiative with or without the help of others in diagnosing their own learning needs, formulating goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes. Self-directed instructional strategies emphasize the importance

of learners taking responsibility for their own learning, making decisions about what, how, and when they learn, and reflecting on their learning process.

Rooted in the concept of Self-Directed Learning (SDL), this approach moves away from traditional teacher-centered models and encourages a more learner-centered experience. It fosters independence, critical thinking, and problem-solving by allowing students to actively engage in shaping their educational journey (Arua, 2022). The self-directed instructional strategy is based on the premise that learners are capable of managing their own learning when provided with the right resources, guidance, and opportunities. This approach encourages students to set their own goals, select learning materials, and pace their learning according to their individual needs and interests. Educators, in this model, act more as facilitators or guides, offering support, resources, and scaffolding to help students become more effective at managing their learning experiences (Atkinson, 2016). This strategy aligns well with the growing emphasis on lifelong learning, as it prepares students to be self-motivated and proactive in acquiring knowledge throughout their lives, whether in academic, professional, or personal contexts. Additionally, it is particularly effective in environments that require flexibility and adaptability, such as online learning or competency-based education.

The benefits of self-directed instructional strategies include fostering motivation, improving critical thinking and problem-solving skills, and increasing learner autonomy. By empowering students to take ownership of their learning process, self-directed strategies help prepare them for the demands of a rapidly changing world where continuous learning and adaptability are crucial (Azikiwe, 2018). Self-directed instructional strategies are grounded in the theory of self-directed learning (SDL), a concept popularized by Malcolm Knowles in the 1970s, particularly in adult education. Knowles described SDL as a process in which learners take the initiative to diagnose their learning needs, set goals, identify resources, choose and implement learning strategies, and evaluate outcomes.

Conventional teaching method

Conventional teaching method is referred to as Direct method and is used describe a learning process where the teacher is in control. Conventional teaching method is an instructional method from the transmission paradigm based on the theories of behaviourism and develop mentalism (Joyce, 2015). Calhoun (2015) viewed conventional teaching methods as a traditional or teacher-centered approaches, have been the predominant mode of instruction in classrooms for centuries. These methods primarily involve direct instruction, where the teacher acts as the central authority figure and disseminator of knowledge, often through lectures, demonstrations, and rote learning (Calhoun, 2015). In this setup, students play a more passive role, receiving information rather than actively engaging in the learning process.

The conventional teaching method emphasizes structured curriculum delivery, uniform assessment procedures, and a strong focus on content mastery (Ornstein & Hunkins, 2017). While this approach has the advantage of being efficient and easy to manage in large classrooms, it often limits opportunities for critical thinking, creativity, and individualized

learning. Despite criticisms, conventional teaching remains widely practiced, especially in regions where resources are limited or where standardized testing plays a significant role in educational outcomes. With the rise of student-centered pedagogies and digital learning tools, the conventional method has come under scrutiny for not adequately preparing students for 21st-century skills such as collaboration, communication, and problem-solving (Prince, 2014). Nevertheless, it continues to provide a foundational structure for formal education, particularly in systems that value discipline, standardization, and measurable results.

In this teaching method, the teacher really spends sometime in teaching, guides the students through a complex problem broken them into simple steps; then the students are given one by one simple steps to carry out on their own and finally the students are given one or more simple problems to accomplish by themselves. To use this teaching method well, there is the need to choose a concept for which conventional teaching method is appropriate. The students must know what to expect in its order and the apportioned time for each. The teacher should speak clearly with a varied tone and speed. The teacher should enhance the speed with visuals and vary the lesson by not speaking the always. For any lesson longer than 30 minutes, the speaker should be varied and the students asked questions. Such questions are usually low memory question. The teacher asks a question and chooses a student to answer it. To answer the teacher's question, the student plays "guess what is in the teacher's head" until he student guesses right. Never the les, the following are the disadvantages of conventional teaching method;

i. It is based on old learning theories which advocate the learning must be moved from simple to complex, and that only measurable learning is meaningful
ii. Students lack the overall purpose of the simple steps which if advanced organizers are applied will be removed.
iii. Teachers cannot assess students' prior knowledge
iv. Retention is low since students have not struggled over problems themselves
v. Conventional teaching method can only work for a small percentage of students

In spite of the above disadvantages, there are some subsumed advantages thus;

i. The teacher has total control of the timing of the lesson
ii. Students are easy to monitor
iii. The curriculum can be covered and the teacher and the teacher would assume to have taught the students.
iv. Information that is relatively simple with one right answer can be taught efficiently with this method. It therefore means that the conventional teaching method may not be discarded but requires support with other proven effective teaching strategies

Conventional instructional strategy has long been the dominant approach to teaching in secondary schools, particularly in English language classrooms where reading comprehension is a major area of focus. This strategy, which is often described as teacher-centered, is built on the belief that the teacher is the main source of knowledge and authority in the learning process, while the student is expected to be a passive recipient of information. In such classrooms, teachers typically read texts aloud, explain meanings, dictate notes, and ask students to repeat or memorize the information presented to them. Although this method is familiar and widely practiced, it has been criticized for limiting students' opportunities to

engage actively with texts and to develop higher-order comprehension skills that are essential for long-term academic achievement (Adeyemi, 2020).

Reading comprehension is a complex process that involves much more than recalling facts or definitions. It requires the ability to interpret meanings, make inferences, analyze ideas critically, and apply information to new contexts. Unfortunately, the conventional method of instruction often emphasizes surface-level learning where students memorize teachers' explanations and reproduce them in examinations without necessarily developing a deep understanding of the text. Studies have shown that learners taught predominantly through this method are often unable to transfer comprehension skills across subjects, since their engagement with reading materials remains limited to what the teacher has explained (Snow, 2022). This has serious implications for their overall academic achievement, as English language comprehension is central to success in other school subjects that rely on reading and interpretation.

Despite these weaknesses, the conventional instructional strategy continues to dominate classrooms because of certain advantages it offers. It allows teachers to cover large portions of the curriculum within limited time frames, which is particularly important in overcrowded classrooms and examination-oriented systems. The method also provides structure, order, and discipline, which helps maintain classroom control, especially where resources are scarce. Teachers can simplify difficult concepts for students, many of whom may lack the ability or motivation to study independently. Moreover, because examinations in many countries emphasize recall of facts, the conventional method often prepares students to perform well in such tests, at least in the short term (Ogunleye, 2015). However, its limitations in relation to reading comprehension are significant. Since students are rarely encouraged to question, explore, or construct meaning for themselves, they become passive learners who rely excessively on their teachers. Reading, instead of being an active and enjoyable process, becomes a chore aimed at passing examinations. As a result, comprehension skills such as inference, evaluation, and synthesis remain underdeveloped.

Gender and academic achievement in reading comprehension

Gender refers to the socially constructed roles, behaviors, and expectations that societies assign to males and females. Unlike biological sex, gender encompasses social and cultural factors that influence individuals' attitudes, motivation, and performance in educational settings. In the context of reading comprehension, gender has been widely studied as a variable affecting students' academic achievement. Across many regions of Nigeria, research consistently shows that female students often outperform their male counterparts in English reading comprehension tasks, raising important questions about the social and instructional factors that sustain this disparity. Ngwoke et al (2025) conducted a study in Ebonyi State and found that female students' superior performance in reading comprehension was significantly associated with their more positive attitudes toward reading and stronger motivation to engage in language learning.

The researchers emphasized that attitudinal and motivational factors, rather than inherent cognitive differences, largely explain the observed gender gap in reading

achievement. These findings highlight the role of psychosocial and environmental influences—such as reading interest, classroom participation, and teacher expectations—in shaping students' learning outcomes. Cultural and societal expectations also contribute to gendered patterns of academic achievement. In many Nigerian communities, girls are encouraged to develop verbal and communicative skills, while boys are often steered toward physical or technical pursuits. This differential socialization can limit boys' engagement with reading-related activities and ultimately affect their comprehension performance. Similarly, gender-related psychological factors such as confidence, self-efficacy, and coping mechanisms in the face of academic challenges influence students' persistence and success in reading comprehension tasks.

Olafunke (2020) and Bamise (2021) revealed that female students typically exhibit higher reading self-efficacy and spend more time engaged in reading activities than males, reinforcing the pattern of higher achievement among girls. Studies conducted in other parts of Nigeria further support these findings. James (2025), in a study carried out in Ibadan, reported that female senior secondary students significantly outperformed male students in English reading comprehension. The difference was attributed to girls' stronger reading habits, greater intrinsic motivation, and better-developed language acquisition skills. Conversely, male students often exhibit lower interest in reading and may experience reduced engagement during reading tasks, which affects their comprehension performance. Similarly, Oda and Kadhim (2017) found that while no significant gender difference existed at the literal and inferential levels of comprehension, female students performed significantly better at the critical comprehension level, which demands deeper cognitive and analytical engagement with texts.

These persistent gender-based disparities in reading achievement indicate that traditional instructional approaches may not adequately cater to the differing learning needs of male and female students. Hence, there is a growing need to adopt gender-sensitive instructional strategies, such as self-directed learning approaches, that promote autonomy, motivation, and engagement among all learners. Self-directed instructional strategies empower students to take responsibility for their own learning—setting goals, selecting materials, and monitoring progress—which can help bridge gender gaps by accommodating individual differences in learning pace, style, and interest. Through such strategies, both male and female students can cultivate stronger reading habits and self-efficacy, leading to improved comprehension outcomes.

METHODOLOGY

This study adopted quasi-experimental design. The research area of this study is Cross River State of Nigeria. The population of this study comprised all 24,573 Senior Secondary II students enrolled in the 300 public secondary schools across River State during the 2024/2025 academic session. The study used a sample size of 723 senior secondary two (SSII) students. The sample was drawn from the area of study using multi-stage sampling techniques. The instrument used for the data collection is the Reading Comprehension Achievement Test (RCAT) adapted by the researcher from the West African Senior School Certificate Examination English Language Question paper. Face and content validation was

used. The data collected were used to determine the reliability coefficient using Kuder Richardson 20 (K-R 20) which yielded an index of 0.91, considered reliable. Data collected from the pretest and posttest were analyzed with mean, standard deviation and Analysis of Covariance (ANCOVA). Mean was used to answer the research questions, the standard deviation was used to determine the proximity of scores while the hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance.

RESULTS AND DISCUSSION

What are the mean achievement scores of students taught comprehension using self-directed instructional strategy and those taught with conventional method?

The result of the data analysis was presented in Table1.

Table 1: Mean and Standard Deviation of Achievement Scores of Students Taught comprehension using self-directed instructional strategy and those taught with conventional method

Groups	Pretest N	$\bar{x}$	SD	Posttest $\bar{x}$	SD	Mean Scores	Gain
Self-Directed Instructional Strategy	304	42.32	11.27	71.77	11.94	29.45	
Lecture Method	419	34.88	9.84	49.59	12.17	14.71	

$\bar{x}$ = Mean Responses, SD = Standard Deviation

Table 1 showed that the experimental group which is the group taught reading comprehension using self-directed instructional strategy had the pre-test mean score of 42.32 with a standard deviation of 11.27 and a post-test means score of 71.77 and a standard deviation of 11.94. On the other hand, students in the control group taught English Language using lecture method obtained a pre-test of 34.88 with a standard deviation of 9.84 and a post-test of 49.59 with the standard deviation of 12.17. The table also revealed that students in the experimental group taught comprehension with self-directed instructional strategy had the mean gain score of 29.45 which is higher than the mean gain score of 14.71 obtained by students in control group. The resulted in table 1 indicated that the students in the two groups benefited from the instructional strategies but those in the experimental group taught reading comprehension using self-directed instructional strategy benefited more than those taught with the lecture method.

Research Question 2

What are the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy?

The result of the data analysis was presented in Table 2.

Table 2: Mean and Standard Deviation of Achievement Scores of Male and Female Students Taught Comprehension using Self-Directed Instructions Strategy

	Pretest			Posttest			
Gender	**N**	$\bar{x}$	**SD**	$\bar{x}$	**SD**	**Mean Scores**	**Gain**
Male	156	31.01	9.71	57.33	9.98	26.32	
Female	148	38.14	12.03	60.13	13.17	21.99	
Difference						**4.33**	

$\bar{x}$ **= Mean Score** **SD = Standard Deviation**

The result in Table 2 showed that male students taught comprehension using self-directed instructions strategy had a pre-test mean score of 31.01 with a standard deviation of 9.71 and a post-test mean achievement score of 57.33 with the standard deviation of 9.98 while the female students obtained the pre-test mean score of 38.14 with the standard deviation of 12.03 and a post mean score of 60.13 with a standard deviation of 13.17. The table also revealed that a mean gain achievement score of 26.32 obtained by the male students is greater than the mean gain achievement score of 21.99 obtained by the female students. This result indicated that the self-directed instructions strategy had effect on both male and female achievement scores but favoured the male students with a slight mean gain of 4.33.

TEST OF HYPOTHESES

H01: There is no significant difference in the mean achievement scores of students taught comprehension using self-directed instructions strategy and those taught with conventional method.

The result of the data analysis was presented in Table 3.

Table 3: Analysis of Covariance (ANCOVA) of the Difference in the Mean Achievement Scores of Students Taught Comprehension using Self-Directed Instructions Strategy and those Taught with Conventional Method

Source	**Type III Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Corrected Model	43841.328[a]	2	17420.664	134.954	.000
Intercept	136900.187	1	136900.187	1060.535	.000
PRETEST	3106.049	1	3106.049	24.062	.000
METHOD	30972.438	1	30972.438	239.937	.000
Error	91651.009	710	129.086		
Total	2271344.000	713			
Corrected Total	126492.337	712			

The result in Table 3 showed a probability value of 0.000 which is less than the 0.05 level of significance. Since the P-value OF 0/000 was less than the 0.05 level of significance, the null

hypothesis was rejected. This means that there is significant difference in the mean achievement scores of students taught comprehension using self-directed instructions strategy and those taught with conventional method

H02: There is no significant difference in the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy.

Table 4: Analysis of Covariance (ANCOVA) of the Difference in the Mean Achievement Scores of Male and Female Students Taught Comprehension using Self-Directed Instructions Strategy and those Taught with Conventional Method

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	3608.541[a]	2	1804.270	10.746	.000
Intercept	74523.053	1	74523.053	443.866	.000
PRETEST	3363.729	1	3363.729	20.035	.310
GENDER	712.232	1	712.232	4.242	.170
Error	50536.561	301	167.896		
Total	1230795.000	304			
Corrected Total	54145.102	303			

The result in Table 4 showed a probability value of 0.179 which is greater than the 0.05 level of significance. Since the P-value is greater than the 0.05 level of significance, the null hypothesis was upheld. This means that there is no significant difference in the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy

CONCLUSION

This study concluded that self-directed instructional strategy significantly enhances students' achievement in comprehension compared to the conventional teaching method. Evidence from the analysis shows that there is significant difference in the mean achievement scores of students taught comprehension using self-directed instructions strategy and those taught with conventional method. And also that there is no significant difference in the mean achievement scores of male and female students taught comprehension using self-directed instructions strategy. The approach also promoted independent learning and deeper engagement with text. Gender differences were minimal, indicating that the strategy benefits both male and female students almost equally. Overall, self-directed instruction proves to be an effective pedagogical approach for improving comprehension performance.

RECOMMENDATIONS

- Self-directed instructional strategy should be used consistently by teachers in teaching comprehension in secondary schools students so as to address the problem of poor achievement among students.
- Teachers should adopt adequate motivation and monitoring technique to ensure that students participate in effectively self-directed instructional strategy while teaching comprehension.

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